

**WOOD
MARKET
TRENDS**

edited by
ANTJE WAHL

FPInnovations 



Natural Resources
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Ressources naturelles
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Significant changes in industry structure and markets have taken place in Europe over the last decade...

Introduction

Europe is Canada's second-largest offshore market for wood products, after Japan. Significant changes in industry structure and markets have taken place in Europe over the last decade, many of which are related to the opening up of the countries in the former Eastern Bloc. The following drivers are playing an important role in the way Europe's forest industry and wood product markets are evolving:

- investments in Eastern Europe and Russia;
- China's rise in furniture and wood products manufacturing;
- climate change and energy security concerns.

This report summarizes the key trends in Europe's wood product sector and assesses resulting opportunities and challenges for Canadian wood product suppliers. While each trend is a stand-alone document, several trends are interconnected and are referenced in the text.

This publication summarizes a large body of market research, literature and data sources. Each market trend includes a list of selected reports and websites for those interested in more in-depth information.

Figure 1
Canada's exports of wood products and furniture to Europe, 1997-2006

Source: Statistics Canada

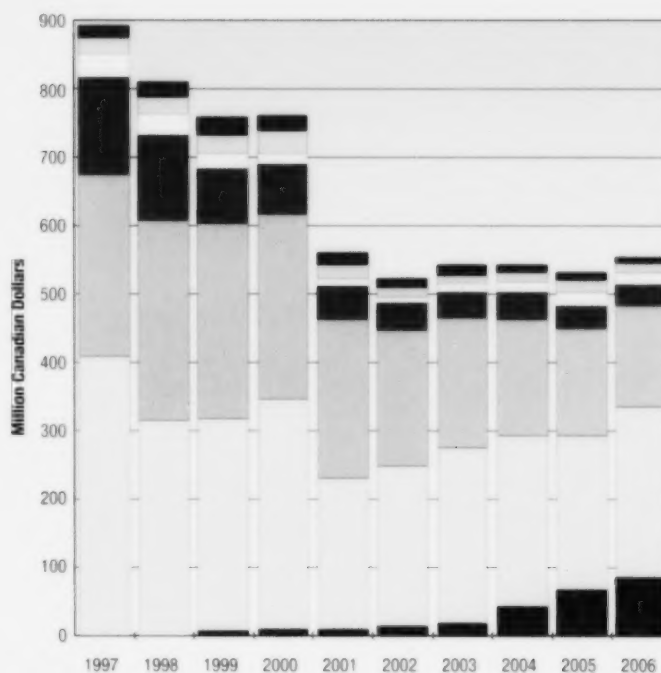
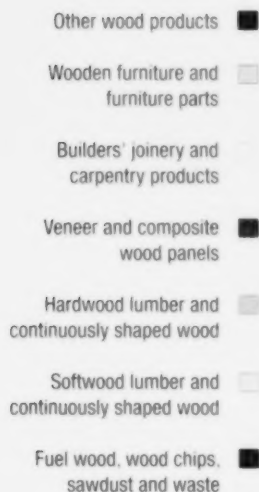
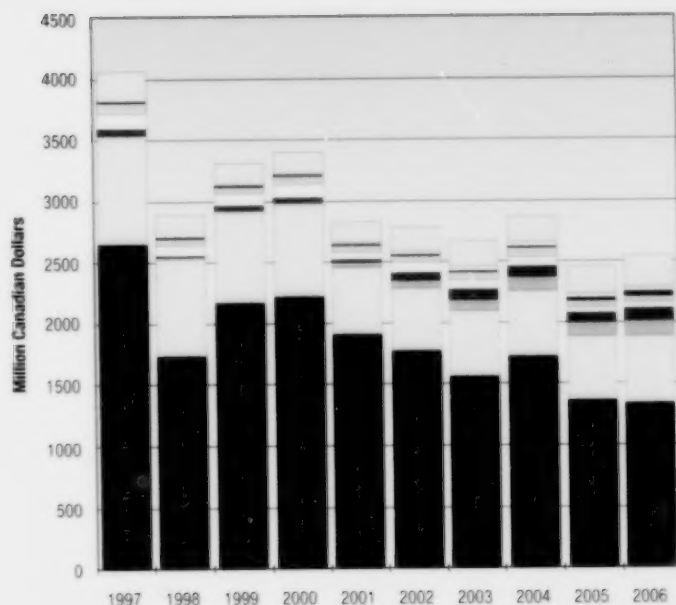
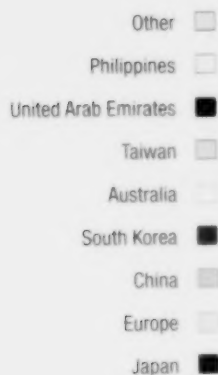


Figure 2
Canada's export markets for wood
products and furniture (excluding
US), 1997-2006



European Union and the Euro Zone

This report covers developments in the European Union (EU) plus Norway and Switzerland. Russia and other countries formerly part of the Soviet Union are included where relevant to the EU markets.

The European Union (EU) is the current name for the former European Community. Until 2005 the EU had 15 member states; ten more countries mainly from the former Eastern Bloc became members in 2005 (EU25). Two more countries (Bulgaria and Romania) joined the EU in 2007 to form the EU27. In this report, the EU27 will be referred to as the EU, unless otherwise stated.

Figure 3
Map of Europe and Western Russia

EU27



Fifteen countries¹ of the EU27 share a common currency, the euro, and their monetary policy is set by the European Central Bank. This economic and monetary union is the most significant step towards an integrated European market. The countries currently not part of the euro zone are legally bound to join the monetary union once their economies qualify.²

Acknowledgements

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The authors thank François Robichaud, Chris Gaston and Torsten Lihra of FPIInnovations for their advice and reviews of the market trends. Many thanks go to Lignum, the wood promotion organization of Switzerland, for giving permission to use photos from their image database in this publication.

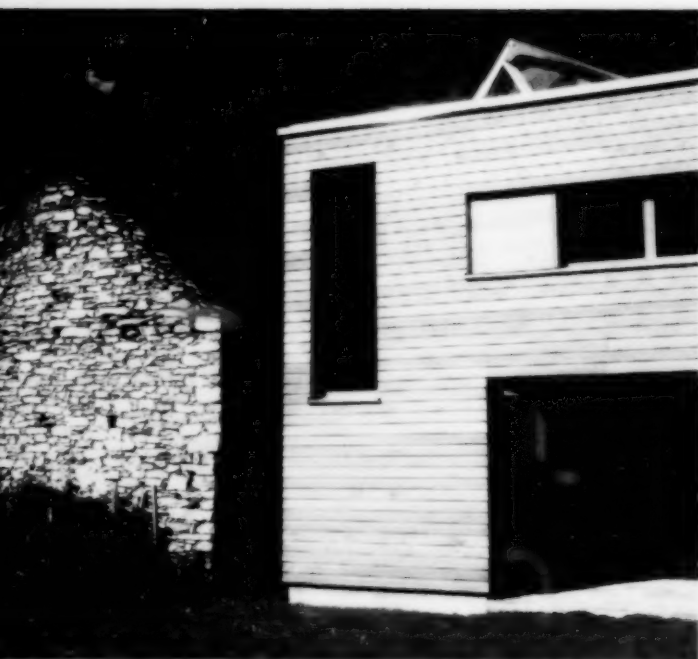


Photo credit: Martin Hügli, Iragna/LIGNUM

Symbols, abbreviations and acronyms used

€	euro
C\$	Canadian dollar
CE	Conformité Européene; mandatory conformity marking on many products for relevant European health, safety and environmental protection legislation
US\$	United States dollar
m ³	cubic metre
m ²	square metre
CO ₂	carbon dioxide
CSA	Canadian Standards Association
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
EU	European Union
EU27	European Union with 27 member states
GHG	greenhouse gas
NGO	non-governmental organization
PEFC	Programme for the Endorsement of Forest Certification Schemes
QWEB	Québec Wood Export Bureau
SFI	Sustainable Foestry Initiative
WPC	wood-plastic composite
UK	United Kingdom
US	United States

¹ Euro zone members (2008): Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovenia, Spain.

² With the exception of Denmark and the UK whose governments can choose whether or not to join the euro zone.

Europe's growing role as a large net exporter of softwood lumber

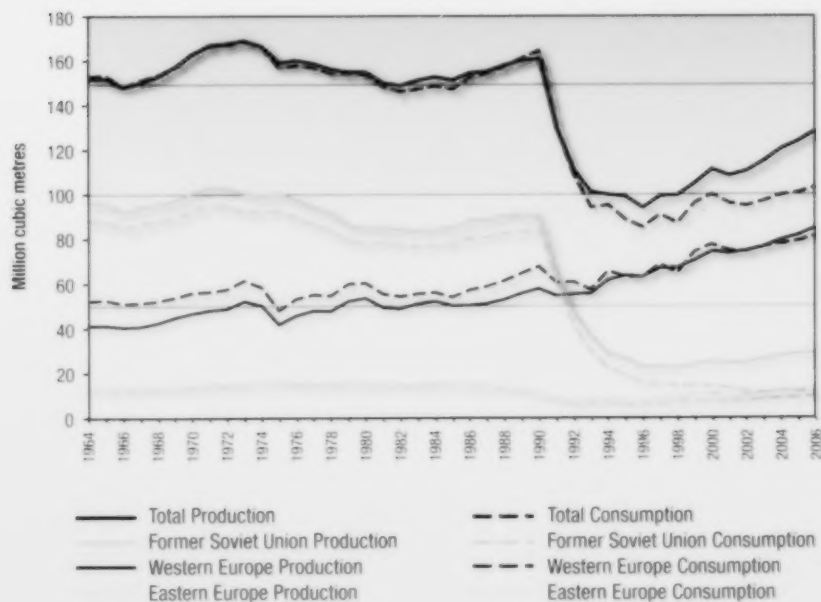
Antje Wahl

Historically Europe had an approximate balance in production and consumption of softwood lumber. This changed for the first time over the last decade, and Western Europe became a net exporter for the first time in 2004.¹ Europe is now the world's largest exporting region of softwood lumber with ever-increasing exports in the last five years because of two key effects:

1. Softwood lumber production in Western Europe has increased more rapidly than consumption. This production upsurge is led by Germany, Austria, Sweden and Finland.
2. In Eastern Europe, the recovery in softwood lumber consumption lags the increase in production volume. Production recovered to pre-1990 levels by 2000, but consumption is still much lower.¹

Figure 4
Softwood lumber production and
consumption in Europe and the former
Soviet Union, 1964-2006

Source: UNECE Timber Database



¹ FAOSTAT foreSTAT Database <http://faostat.fao.org/site/381/default.aspx>

The US has replaced Japan as the largest offshore export market for European softwood lumber producers.



Photo credit: Michael Meuter/LIGNUM

Europe's and Russia's export markets

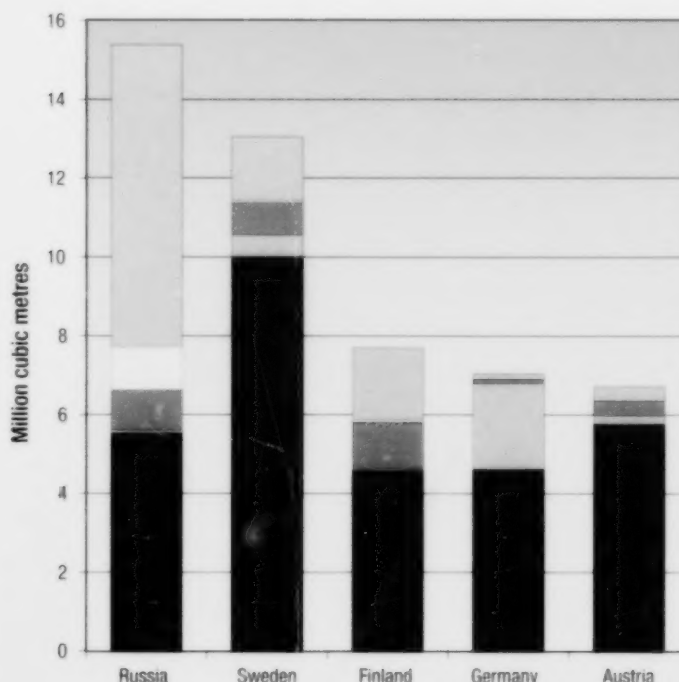
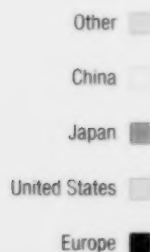
Europe and Russia exported 29 million m³ of softwood lumber to destinations outside Europe in 2006, up from 25 million m³ a year earlier. Russia, Sweden, Finland, Austria and Germany are the largest exporting countries. For Sweden, Finland and Germany, non-European markets account for about a third of total exports, while Russia exports more than 60% of its volume to destinations outside Europe.²

Europe's and Russia's main export markets are the US, Japan, the Middle East, North Africa and increasingly, China. The US has replaced Japan as the largest offshore export market for European softwood lumber producers. Nearly all the volume comes from Germany. Europe's exports to the US rose to 3.8 million m³ in 2005, but the high Euro-US dollar exchange rate and the slowdown in the US housing market contributed to lower imports (3.4 million m³) from Europe in 2006.

Exports from Russia are expected to increase significantly according to forecasts at the International Softwood Conference. Tightening log supply in Northern Europe will drive the expansion in softwood lumber production to Central and South-eastern Europe. In the near future, sawing capacity is forecast to mainly grow in Germany, Russia, Romania and Switzerland.³ Depending on how consumption in Eastern Europe continues to recover, growing production could further increase Europe's net exports of softwood lumber to other regions in the world.

Figure 5
Export destinations by top 5 European exporters including Russia, 2006

Source: Global Trade Atlas



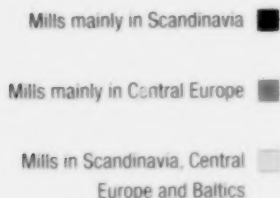
² Trade data from Global Trade Atlas, based on reporting by national statistical offices

³ Proceedings of International Softwood Conference, 8-9 Oct 2007, Geneva, Switzerland

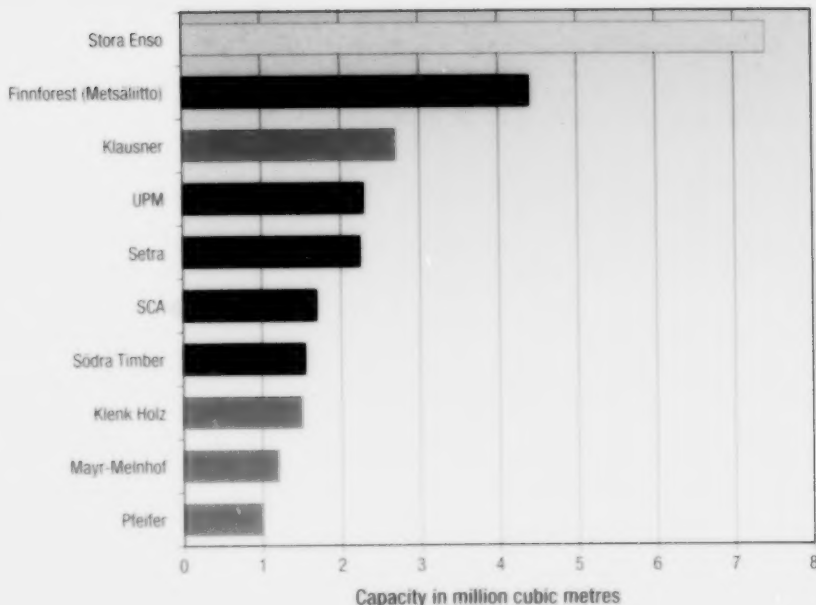
Figure 6

Top Ten Softwood Lumber Producers in Europe, May 2006

Source: Jaakko Pöyry Consulting, Klausner Group



Note: Mills in Central Europe are in Austria, Germany, Czech and Slovak Republics.



US imports from Europe

US imports of softwood lumber from non-Canadian suppliers are at record highs, from South America and more recently from Europe. These imports exceeded 6 million m³ in 2006. Imports from Europe accounted for 7% of the total softwood lumber volume imported into the US and 10% of the total value.

Europe does not have a cost advantage in the US market and competes with North American products primarily on the basis of product quality. Dimension lumber and studs for new residential construction and repair & remodeling comprise the vast majority of the European exports to the US market. Exported products also include appearance grade boards, industrial lumber, glulam stock and decking.

Softwood lumber exports to the US are expected to continue increasing in the long run with several new large sawmills being built or planned in Germany that will focus on the US market. In the recent downturn in the US market, European producers were able to redirect volumes from the US to other markets within Europe, and to the Middle East and Asia.

From the viewpoint of European producers, following are the reasons for investing in new sawmills and capacity expansions that target the US market:

- Softwood log volumes and quality are decreasing in some regions of North America, including Eastern Canada⁴;

⁴ In British Columbia available softwood volumes are expected to remain at high levels until approximately 2009 with more than 80 million m³ of pine killed annually by the mountain pine beetle epidemic. After that the infestation will decline rapidly, and log supply will fall.

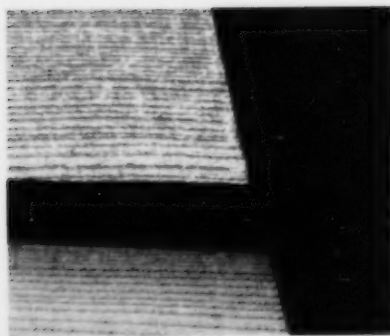


Photo credit: Architektur und Baumanagement AG, Dallenwil/LIGNUM

The rate of construction of new sawmilling capacities in Europe has outstripped the rest of the world.



Photo credit: Michael Meuter/LIGNUM

- No spruce lumber production in the US South, which is Europe's primary target market in North America;
- Shipping costs from Canada and Western Europe to the US South are comparable;
- The European sawmilling industry is technologically advanced and has more production flexibility than most North American mills. The flexible production setup in many European mills allows manufacturers to switch more easily between different exports markets.

Production capacity is growing in Central Europe

The rate of construction of new sawmilling capacities in Europe has outstripped the rest of the world. The new European sawmills are among the lowest cost sawmills in the world, especially when they are located in a lower labour cost country. However, log costs have been increasing in many regions in Europe.

While Scandinavian producers still manufacture more softwood lumber than sawmills in Central Europe (Austria, Czech Republic, Germany and Switzerland), they have not been able to increase production in recent years. The largest production expansions are taking place in Central Europe. As a result, Central European mills are on average almost three times as large as Scandinavian mills, based on the top producers in both regions.

Mills in Russia are often inefficient and older, but many new or modernized mills are competitive in export markets. European companies are also investing in sawmills in Western Russia, especially Finland where domestic log supply is tight. Production capacities in Russia are expected to increase, partly because of softwood log shortages in Western Europe and because of the higher Russian export tax on logs.⁵

For more information

Burdin, N., Seppälä, J., and Taylor, R.E. 2007. Europe and Russia Soar as North America Retreats: Sawn Softwood Markets, 2006-2007. In: UNECE and FAO. *Forest Products Annual Market Review 2006-2007*.

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<http://www.euwid-wood-products.com/>

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Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

⁵ See also **Trend 2: Softwood log shortage is developing in Europe** (page 6)

MARKET OPPORTUNITIES

- Europe's net exports of softwood lumber to other regions of the world are growing. The greatest opportunities for Canadian suppliers to Europe lie in processed products such as prefabricated housing packages and appearance grade components for the joinery sector.
- Lumber has potential only in specialty and niche markets, such as western red cedar for siding. However, some of these specialty markets are under threat from engineered wood products.
- Any significant increase in softwood lumber consumption within Europe will take pressure off overseas export markets, such as the US market and Asia. If Europe succeeds in increasing per capita consumption of wood, prospects for Canadian exporters will also improve in other export markets.

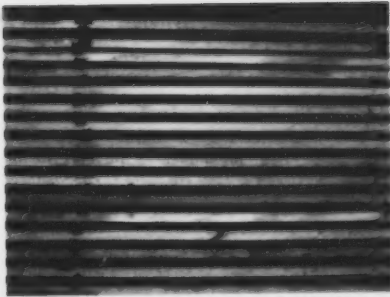


Photo credit: Andre Carlen/LIGNUM

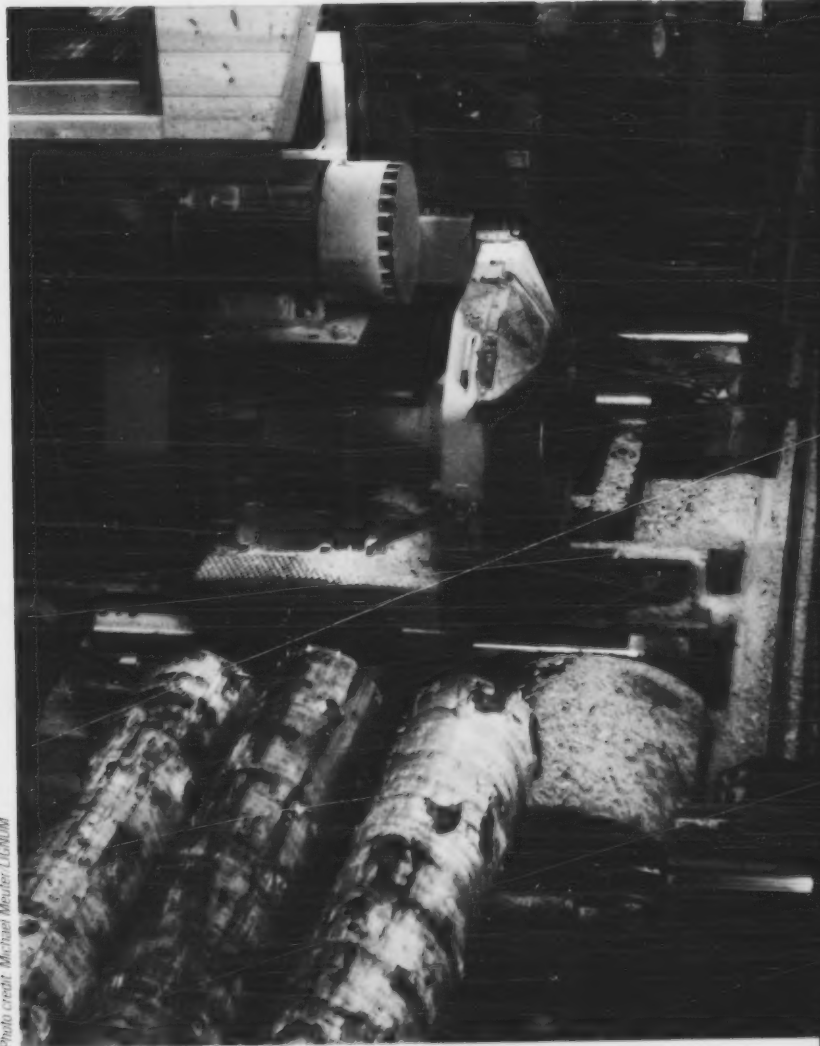


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Softwood log shortage is developing in Europe

Antje Wahl

If Russia's log export duty increases go ahead as scheduled, they will have a major impact not only in Finland and the Baltic States, but also in China. Higher global wood prices can be expected if the price of Russian softwood in Europe and China goes up.

Competition for wood fibre in Europe is increasing as production capacities for lumber, pulp and bioenergy are expanding.¹ Even though harvesting levels and log trade have increased in response to higher demand from industry, log prices have risen in many parts of Europe.

Log trade has helped the sawmilling industry expand considerably in the last ten years, notably in Finland and Austria and to some extent in Sweden and the Baltic States (Estonia, Latvia and Lithuania). Finland imports significant volumes of softwood logs from Russia; Finland has a domestic log shortage, especially in spruce logs, relative to its processing capacity in lumber, plywood, and pulp and paper.

Russia increases duties on log exports

Western Russia on the other hand has significant softwood forest resources, and softwood lumber production is still much lower than before the collapse of the Soviet Union. Any significant increase in softwood log supplies and lumber production can only come from Russia in the mid- to long-term future.

In February 2007 the Russian government announced significant increases in duties for softwood and hardwood log exports over the next two years. Russia increased duties on unprocessed softwood logs to 20% in July 2007, with a minimum of €10/m³ (before July 1 - 6.5% with a minimum of €4/m³). From April 2008, the export duty is projected to increase to 25% (no less than €15/m³), and by January 2009 the export duty is scheduled to be up to 80% and no less than €50/m³. This would in effect halt (legal) log exports from Russia.

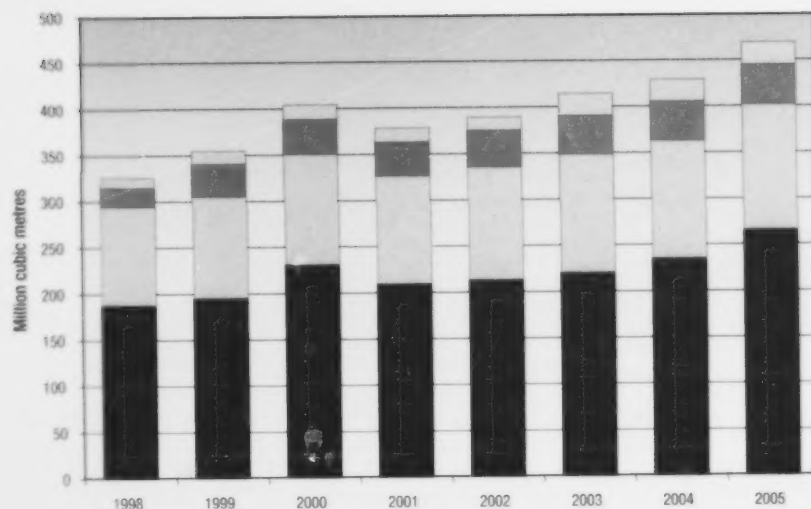
If Russia's duty increases go ahead as scheduled, they will have a major impact not only in Finland and the Baltic States, whose installed processing capacities rely to a large degree on imports from Russia, but also in China. If the price of Russian softwood in Europe and China increases, higher global wood prices can be expected.

Photo credit: POST/LIGNUM

¹ See also **Trend 1: Europe's growing role as a large net exporter of softwood lumber** (page 1), and **Trend 8: Bioenergy boom is starting to affect the forest industry** (page 29)

Figure 7
Softwood log production in Europe, 1998-2005
 Source: FAO

Sawlogs and Veneer Logs ■
 Pulpwood □
 Fuel Wood ■
 Other Industrial Roundwood □



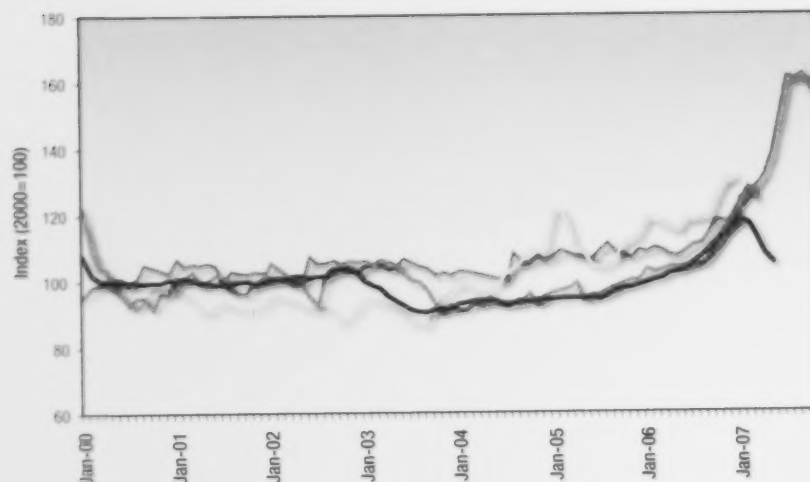
New sawmill capacities and declining softwood log availability

Parts of Central Europe, Russia and Romania currently have the highest surplus in softwood logs, and this is where most recent new sawmill investments and expansions are being made. The majority of the new sawmill capacities in Europe were planned for southern Germany immediately after results of the nationwide forest inventory showed that significantly higher harvest volumes of spruce are feasible in the coming fifteen years.

In Central Europe (Germany, Switzerland, Austria, Czech Republic and Slovakia), not much additional softwood volumes will be available after the new, currently planned capacities have been added. Efforts are under way in Germany to mobilize existing timber volumes from small private forest owners. Given the increasing shortages in softwood log supplies, it remains to be seen whether the current growth in sawmill capacities will in fact result in much higher softwood lumber production volumes.

Figure 8
Monthly price index for spruce sawlogs in selected countries in Europe, 2000-2007
 Source: Metia Metinfo, UNECE/FAO Price Database

Austria Spruce/Fir —
 Germany Spruce (Public Forest) —
 Finland Spruce —
 Lithuania Spruce (State Forest) —



MARKET OPPORTUNITIES

- Europe's limited softwood resources coupled with the new Russian log export duties restrict the future growth of European competition in Canada's softwood export markets including the US and Asia.

For more information:

Ekström, H. 2007. Strong Sawnwood and Pulp Markets Push Roundwood Prices to Record Highs: Wood Raw Material Markets, 2006-2007. In: UNECE and FAO. *Forest Products Annual Market Review 2006-2007*.

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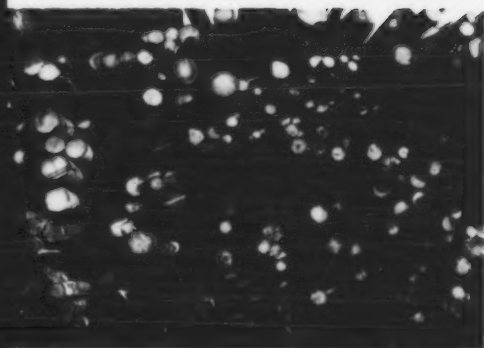


Photo credit: LIGNUM



Photo credit: Michael Meuter LIGNUM

Green building trends are advancing wood as a building material

Patrick Lavoie

All new buildings will undergo an energy audit and be attributed an energy rating, so that buyers have the ability to distinguish energy efficient from energy inefficient buildings.

Most European residential construction has historically used masonry or concrete block, except in Scandinavia where the tradition of building with wood is strong. Timber frame construction has recently gained ground in several European countries, most notably the UK, Ireland and France. Scotland is the country with the highest share of wood construction outside Scandinavia, with a timber frame market share of nearly three-quarters in residential housing in 2006.¹ A number of recent trends are supporting the expansion of timber frame structures similar to those built in North America.

Environmental trends supporting wood frame construction: Energy efficiency and green construction

Most European countries are strong advocates for the implementation of the Kyoto protocol. Between 1990 and 2004, the EU has managed to reduce its greenhouse gas (GHG) emissions by 0.6%. Leading countries were Germany (-17%) and the UK (-14%). Meanwhile, North American emissions have increased by approximately 20% over the same period. Consumer awareness of environmental issues also plays a key role in purchasing decisions. Energy efficiency and green construction are two trends that illustrate the importance of environmental issues as they relate to home buying behaviour.

It is estimated that one-third to one-half of all GHG emissions are attributable to building construction and operation costs.^{2 3} As a result, the EU has put in place an energy efficiency directive for buildings that prescribes that all new buildings will undergo an energy audit and be attributed an energy rating.⁴ The implementation of this directive is likely to affect the market for new and existing construction with buyers having the ability to distinguish energy efficient from energy inefficient buildings. This change should support the increased use of timber frame construction in Europe. A number of countries including France, Germany and the UK, have already incorporated this directive in their national building codes.

Photo credit: Renggli, Sursee/LIGNUM

¹ UK Timber Frame Association. <http://www.timber-frame.org/>

² <http://communiqués.gouv.qc.ca/gouvqc/communiqués/GPQF/Avril2006/20/c9105.html>

³ Ürge-Vorsatz et al. 2007. *Appraisal of policy instruments for reducing buildings' CO₂ emissions. Building Research and Information*. Volume 35. Number 4. July/August 2007.

⁴ Lowe, Robert. 2007. Editorial: Addressing the challenges of climate change for the built environment. *Building Research and Information*. Volume 35. Number 4. July/August 2007.

Table 1**Estimated market share of house construction in wood in selected European countries**

Source: AFCOBOIS, INSEE (France); German Federal Statistical Office (Germany); Department for Communities and Local Government, UKTFA (UK); ITFMA (Ireland); USDA (Denmark, Poland); QWEB from various sources for other countries

Country	Timber frame residential housing starts	Timber frame market share in total starts	Reference year
Ireland	28,000	30%	2006
UK	47,500	21%	2006
Belgium	8,244	18%	2004
Switzerland	7,200	18%	2004
Austria	6,300	15%	2004
Germany	17,959	12%	2005
Denmark	2,000	>10%	2006
Poland	3,000	5%	2006
France	12,000	3%	2006
Spain	3,150	<1%	2004

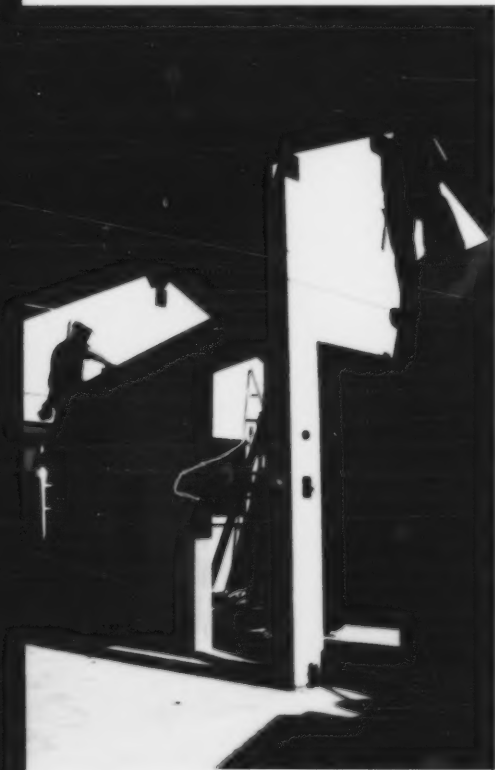


Photo credit: Peter Brandle/LIGNUM

Contrary to the view held by many North Americans, Europeans generally see wood use in construction as having a positive impact on the environment as wood is considered carbon neutral and compares favourably to steel, concrete block, masonry and other building materials. In the UK, efforts are being made to develop a Code for Sustainable Buildings that includes material use and CO₂ emissions.⁵

Housing shortage and wood frame housing

In 2005, France reported a housing deficit of more than 600,000 units. This figure is now closer to a million units for a total population of more than 60 million. Similarly, the Canadian High Commission in the UK reported that one of the three main issues affecting the homebuilding industry was the shortage of new housing. More than 40% of social housing built in the UK is built using the timber frame method. The advantages offered by timber frame housing (speed of construction, cost efficiency, energy efficiency, etc.) support the expansion of wood use in structural applications. It is worth noting the high level of prefabrication in wood home construction in Europe (closed wall panels, roof and floor trusses) as this method of delivering the product addresses labour shortages currently affecting the construction industry.⁶

Lack of skilled labour

The lack of workers skilled in timber frame housing construction curtails the development of this construction method in many European countries. In France, homebuilders estimate that, for each wooden home construction, another one is lost due to a lack of suppliers or labour. Large building materials' suppliers, such as St-Gobain and PBM-Wolseley, are now getting

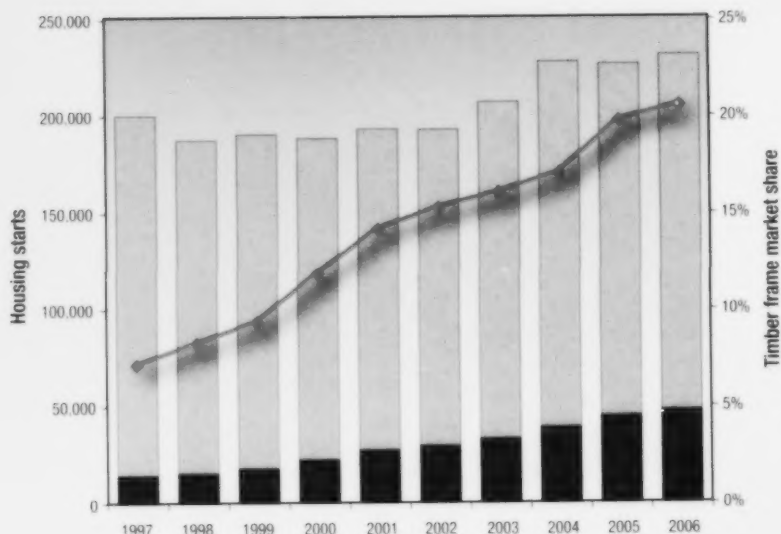
⁵ <http://www.communities.gov.uk/documents/planningandbuilding/pdf/142865>

⁶ <http://www.cmhc-schl.gc.ca/en/hoficlincl/cmhc/in/suexin/inma/upload/Quick-facts-on-the-United-Kingdom.pdf>

Figure 9
UK timber frame construction in
residential housing starts, 1997-2006

Source: Department for Communities and
 Local Government, UKTFA

Non-timber frame starts 
 Timber frame starts 
 Timber frame market share 



increasingly involved in manufacturing structural components. This is similar to the situation in North America, where large prodealers have taken the industrialization route. The UK addresses the labour and supply issue through imports. Canadian exports of prefab homes to the UK almost reached \$20 million in 2006, four times as high as in 2000.

Increased cost of traditional building materials

Until early 2006, producer prices for brick, iron and steel and to a lesser extent for cement rose in Germany, while softwood lumber prices continued their downward trend (except a brief surge in 2006).⁷ This is partly explained by increased energy and material costs linked with higher global demand for steel, minerals and aggregates, especially from China. Increases in prices for steel and brick are contributing to making softwood lumber an attractive alternative building material.

Builder insurance

European building norms have tightened over the last few years following an increase in the number of legal actions arising from construction problems. This situation affects the use of wood in construction since this material is still considered an alternative in many countries, and thus a somewhat unproven building method. In order to address this issue, builders are required to purchase different types of insurance coverage. In France for instance, builders need to purchase a ten-year warranty that covers building quality, soil conditions and legislative conformity. Other types of insurance required include biennial (performance related), maintenance bond, completion («parfait achèvement») and delivery insurance.⁸ These requirements represent obstacles for Canadian companies interested in entering these markets.

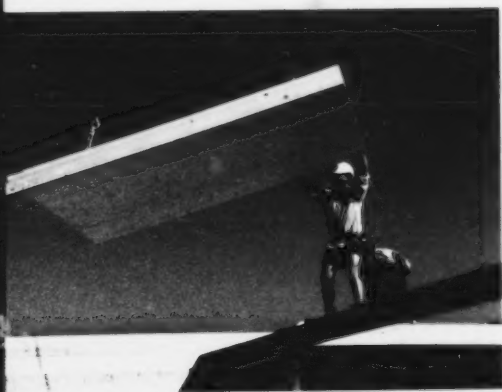


Photo credit: MINERGIE/LIGNUM



Photo credit: Log Home, Brunnen/LIGNUM

⁷ German Federal Statistical Office. <http://www.destatis.de/>

⁸ CMHC. 2004. Housing Export Market: Opportunities and Contacts in France.

MARKET OPPORTUNITIES

- While wood used in timber frame residential housing is mostly of European origin, Canadian home manufacturers and engineered component suppliers have growing opportunities in Europe.
- Opportunities can be found in almost all markets if companies devote the appropriate resources to:
 - a) produce the desired products
 - b) comply with building codes and have CE marking on products
 - c) promote the products to homebuilders
 - d) train builders to install the products.
- The UK and Ireland stand out as the most receptive markets for wood frame construction.

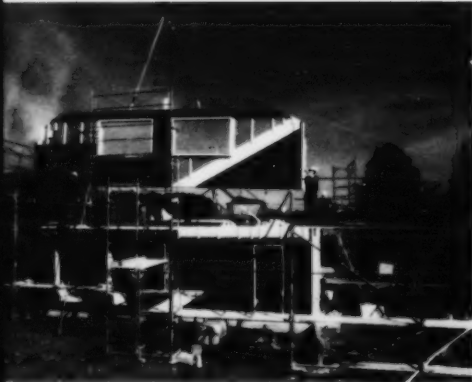


Photo credit: Peter Brandle/LIGNUM

For more information:

Canada Mortgage and Housing Corporation provides Canadian exporters with information on foreign housing markets:

<http://www.cmhc-schl.gc.ca/en/hoficlincl/cmhc/in/suexin/inma/index.cfm>

Robichaud, F. Lavoie, P. Gaston, C. 2005. *Wood Opportunities for Manufactured Housing and Structural components*. Special Publication SP-47, Forintek Canada.

UK Department of the Environment, Transport and the Regions. 1998. *Rethinking Construction*. Available at:

<http://www.modelsolutions.net/rethinking-construction-report/contents.htm>

UKTFA. 2005. *Realising the Opportunities in Off Site Construction*. Available at:

http://www.forestryscotland.com/pages/publications_detail.asp?id=5

Towards green wood procurement in Europe

Antje Wahl

Price premiums for certified wood products are rare.

Both private demand and public procurement policies in Europe drive the growth in "green" procurement, where environmental criteria play a key role in the buyer's decision-making process.

Concerns about legality and sustainability of wood products

Illegal logging in many parts of the world leads to environmental and social damage and costs governments in lost revenues. The volume from illegal logging is considerable, estimated at 20 to 40% of total global industrial wood production. Concern about the consequences of illegal logging led the EU to adopt an "Action Plan for Forest Law Enforcement, Governance and Trade" (FLEGT) in 2003 to address these problems. The plan includes measures to limit the trade in illegally harvested wood, promote green public procurement policies, and support private sector initiatives.

While the legality of wood products is the main focus of the EU Commission and FLEGT, in most European countries consumers, industry and NGOs are also concerned about the sustainability of wood products that are imported

Figure 10
Certification status in Canada's forests,
June 2007 (Oct 2007 for FSC)
Source: Canada Sustainable Forestry
Certification Coalition, FSC

CSA ■

SFI □

FSC ■

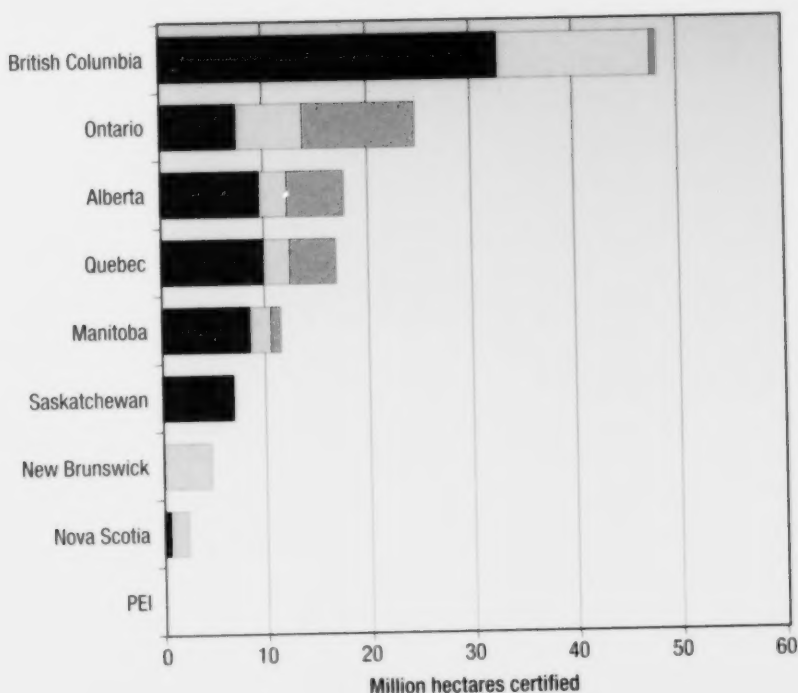
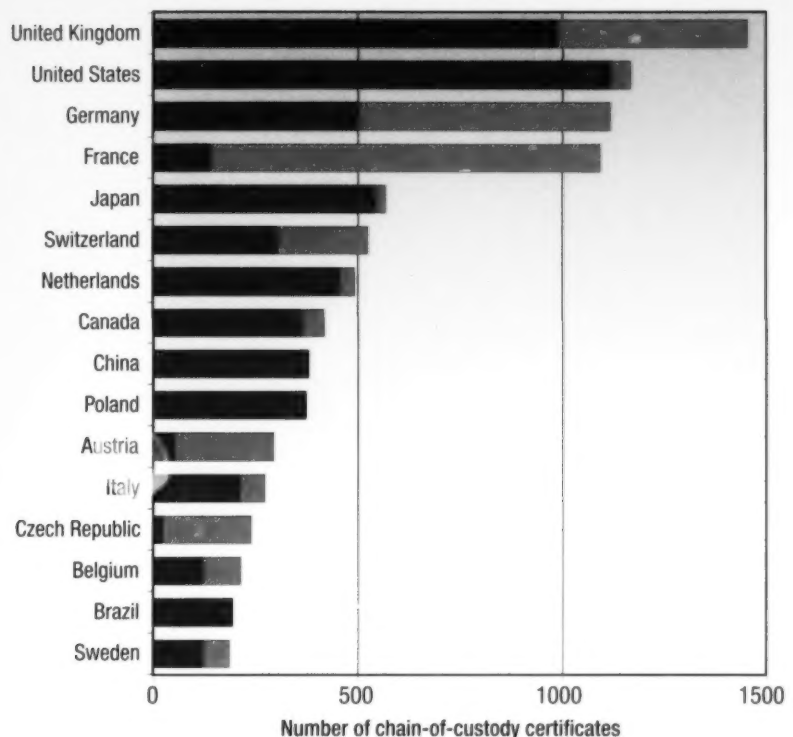


Figure 11
Distribution of chain-of-custody
certificates among top countries,
October 2007

Source: FSC, PEFC, SFI

FSC ■
 PEFC ■



In business-to-business transactions and in public purchasing the importance of wood product certification is growing.

and processed in Europe. The governments of Belgium, Denmark, France, Germany, the Netherlands and the UK have started to implement wood purchasing policies for legal and/or sustainable wood products that try to ensure that only products of legal origin and from sustainably managed forests are used by public services.

PEFC and FSC are the leading certification schemes

To address legality and sustainability concerns, voluntary certification schemes and standards for sustainable forest management have been developed since the early 1990s. The two largest schemes are the Programme for the Endorsement of Forest Certification Schemes (PEFC) and the Forest Stewardship Council (FSC). PEFC endorses the Canadian Standards Association (CSA) Sustainable Forest Management Program and the Sustainable Forestry Initiative (SFI) scheme. More than half of the world's PEFC-endorsed certified forests and almost one-quarter of FSC certified areas were in Canada in 2007, totalling over 130 million hectares. Some countries in Europe with a large forest industry, such as Austria and Finland, have 100% of their managed forests certified.

Demand for certified wood products is limited but growing

The impact of certification on the end consumer remains limited in most European countries, but in business-to-business transactions and in public purchasing the importance of certification is growing. *Price premiums for*

certified wood products are rare however. This is why chain-of-custody certification is infrequent among wood product manufacturers and distributors, and the majority of timber coming from certified forests loses its "certified" status before reaching the market. In addition, wood products that are certified are often not labelled and marketed as such.

Quantifying Europe's consumption of certified wood products is difficult because official data and separate trade classifications do not exist. The number of chain-of-custody certificates by country gives an indication of certified wood product availability. The UK is the country with the highest number of chain-of-custody certificates in the world, followed in Europe by Germany and France. Wood product manufacturers mostly become certified for market access, credibility and certification requirements by industry associations.

A survey¹ carried out in the UK found that certification is called for by buyers of lumber and components, but in many cases it is not obligatory. The exception is public buildings that require environmental certification of all wood products used. Certification through FSC and PEFC are the best-known and accepted sustainable forest management certifications in the UK.

¹ Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

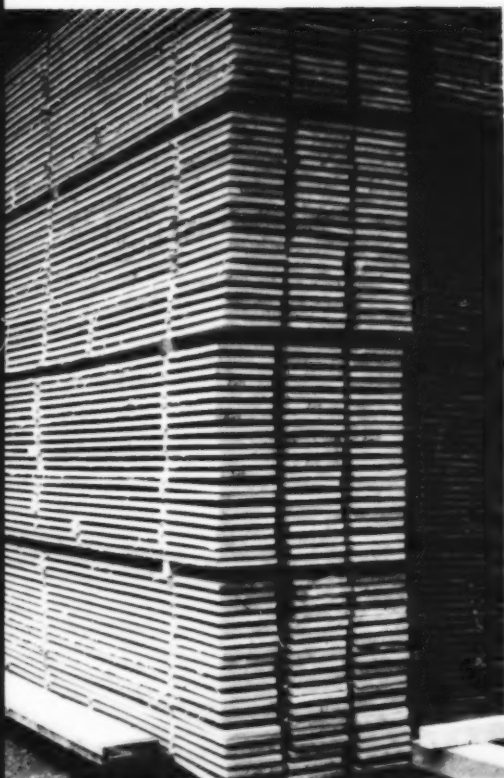


Photo credit: CFPF, Le Mont-sur-Lausanne

MARKET OPPORTUNITIES

- Canada has over 130 million hectares of certified forest; more than half of the world's PEFC-endorsed certified forest and almost one quarter of all FSC certified forests is in Canada.
- Increase the availability and promotion of chain-of-custody certified wood products (such as FSC or PEFC, including CSA and SFI), especially for non-structural applications.
- Demand and awareness of certification is highest in Northern and Western Europe, including the UK, the Netherlands and Germany.

For more information:

Canada Sustainable Forestry Certification Coalition. <http://www.certificationcanada.org>

IBM Business Consulting Services. 2003. *A Greenward Shift in the Market for Forest Products from British Columbia*. Available at: <http://www.greenpeace.org/raw/content/canada/en/documents-and-links/publications/a-greenward-shift-in-the-market-2.pdf>

Kraxner, F., Mater, C., and Owari, T. 2007. Biomass for Energy and Plantations New Certification Driver: Certified Forest Product Markets, 2006-2007. In: UNECE and FAO. *Forest Products Annual Market Review 2006-2007*. Available at: <http://www.unece.org/trade/timber/mis/fpama.htm>

Owari, T., Juslin, H., Rummukainen, A., and Yoshimura, T. 2006. Strategies, Functions and Benefits of Forest Certification in Wood Products Marketing: Perspectives of Finnish Suppliers. *Forest Policy and Economics*, 9(4): 380-391.

UNECE. 2006. *Public Procurement Policies on Wood and Paper Products and Their Impacts on Sustainable Forest Management and Timber Markets*. Proceedings of UNECE/FAO Policy Forum, Geneva, Switzerland, 5 Oct 2006. Available at: <http://www.fao.org/docrep/009/a0914e/a0914e00.htm>



Photo credit: VSFU/LIGNUM

European furniture industry is improving its competitiveness

Antje Wahl

Instead of lumber, furniture manufacturers increasingly demand semi-finished and finished components.

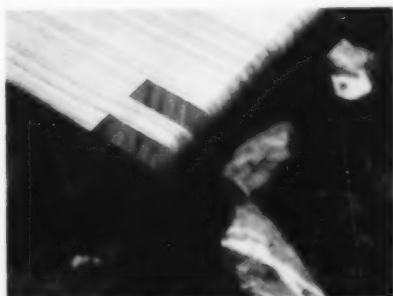


Photo credit: Eveline Lochmatter, Meggenwerkstatt95/LIGNUM

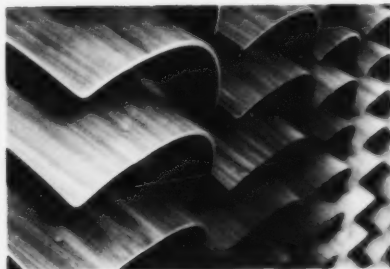


Photo credit: Röhrlisberger, Gumligen/LIGNUM

European furniture manufacturing has traditionally been a very important market for North American hardwoods. The growth in furniture production in other parts of the world, especially China, has diminished Europe's relative market position for hardwood suppliers. However, Europe's furniture industry is still the world's largest producer, accounting for about 40% of the world's furniture production.¹

Within Europe, Germany was the largest furniture producing country, representing over 27% of total EU production in 2003, followed by Italy (22%), France (14%) and the UK (10%). Of the new EU countries in Eastern Europe, Poland is the largest furniture producer followed by the Czech Republic and Romania.²

Competing with low cost competition

To successfully compete with low cost competition, the European furniture industry has focused on developing competitive advantages:³

- flexible production that allows customized products
- high quality specifications and advanced technology
- superior design
- development of other than price based values (branding, buying experience)
- integration of pre- and after-sales services
- quick distribution with minimal stock holding.

The cost pressure on furniture manufacturing in Western Europe is high, and the price of wood is a critical factor. Companies look to Eastern Europe for lower-priced wood raw materials. A second strategy to reduce cost is outsourcing the production of semi-finished and finished furniture components.

¹ CBI. 2006. *The Domestic Furniture Market in the EU*.

² European Commission. *Enterprise and Industry: Furniture*. http://ec.europa.eu/enterprise/furniture/index_en.htm

³ Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

Figure 12
Extra-EU27 Trade in Wood
Furniture, 2001-2006

Source: Eurostat

Exports ■
Imports ■
Net trade (exports) ■
Imports from China —●—

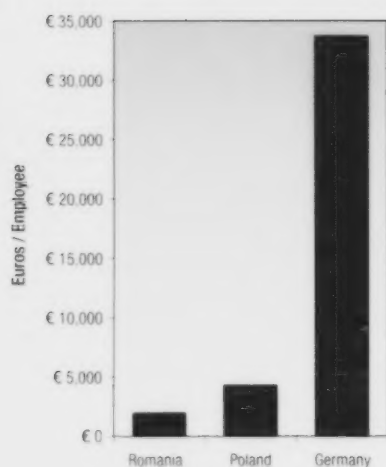
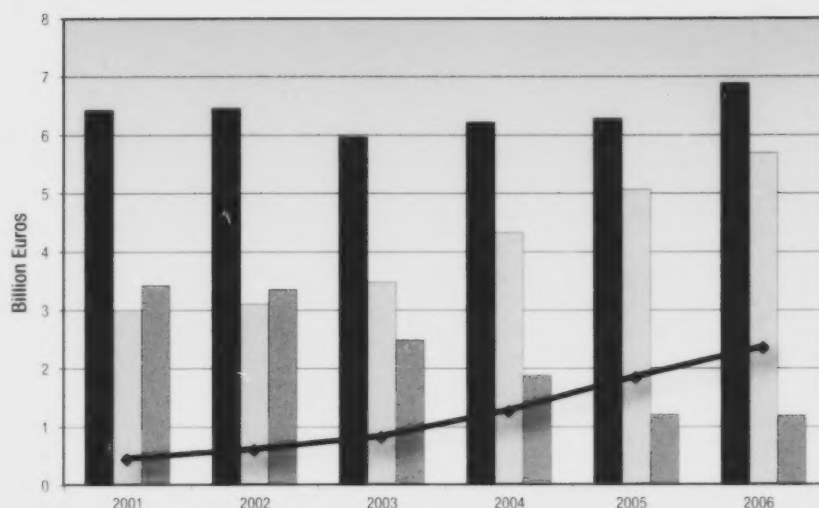


Figure 13
Labour cost in furniture manufacturing
in Romania, Poland and Germany, 2004

Source: Eurostat, Lignum Consulting

Continued production outsourcing

Eastern Europe presents an opportunity for labour-intensive industries, such as the furniture industry, to regain part of their lost price competitiveness. Outsourcing the production of components and semi-finished products gives the European furniture industry greater flexibility, enabling it to respond more quickly to market changes.

Larger Western European companies have moved furniture production to Eastern Europe to take advantage of lower labour costs and existing expertise and infrastructure in furniture manufacturing. On average, the furniture industry in Eastern Europe exports more than 70% of their production, mostly to Western Europe.⁴ The relatively low labour cost in Eastern Europe combined with the advanced level in manufacturing technology creates a very competitive situation for suppliers of value-added wood products to the European furniture industry.⁵ **Trend 6: Hardwood processing is shifting eastward to Eastern Europe and Russia** (page 20) describes this development in more detail.

Other companies have moved production to parts of North Africa where labour costs are also substantially lower. The majority of European manufacturers moving production to the Far East now, however, are aiming at developing the Chinese and other foreign markets that are faster growing than Western Europe.

⁴ European Commission. Enterprise and Industry: Furniture. http://ec.europa.eu/enterprise/furniture/index_en.htm

⁵ Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

Demand for North American hardwoods

Traditional North American hardwoods including hard maple, white oak, cherry and red alder continue to have a strong position in Europe's furniture sector.⁶ Instead of lumber, furniture manufacturers increasingly demand semi-finished and finished components. Furniture manufacturers are becoming furniture assemblers. Product quality, especially colour and defect sorting, needs to be high to compete with lower-priced products from Eastern Europe, and increasingly from China.

⁶ UNECE and FAO. 2007. *Forest Products Annual Market Review 2006-2007*.



Photo credit: Rothlisberger, Gumligen/LIGNUM

Furniture manufacturers are becoming furniture assemblers, enabling them to respond more quickly to market changes.

MARKET OPPORTUNITIES

- Develop and improve furniture components made from traditional North American hardwoods that continue to have a strong position in the European market.
- Canadian suppliers should increase further processing of hardwood lumber to: capitalize on the trend towards using more components instead of lumber; and compete with alternative, often lower-priced sources of lumber supply in Eastern Europe by offering high-quality, semi-finished or finished products.
- Furniture components need to be developed in close cooperation with furniture manufacturers in Europe.

For more information:

CBI. 2006. *The Domestic Furniture Market in the EU*. Available at:
<http://www.cbi.eu/>

CSIL market research reports on the furniture sector, available for purchase at :
<http://www.csilmilano.com/>

UEA European Furniture Manufacturers Federation. *Furniture in Europe*. Available at:
<http://www.ueanet.com/UEABROCHURE.pdf>

Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.



Hardwood processing is shifting eastward to Eastern Europe and Russia

Antje Wahl

Production of labour-intensive and low margin products in particular has been shifting to Eastern Europe because of low labour costs.

Europe remains the most important market for Canadian hardwood lumber exports (excluding the US) in both volume and value despite the recent growth of China's market. The unit value of Canada's hardwood exports to Europe has increased, reflecting Europe's consumption shift from furniture towards high-end joinery, such as staircases, flooring, doors and door frames.¹ The strongest demand driver has been hardwood flooring, which grew considerably between 2004 and 2006, helping offset some of the drop in demand from the furniture sector.²

Hardwood lumber consumption has been stable in Europe for the last five years, but the Western European region has experienced a gradual decline from 9.5 million m³ in 2002 to 8.2 million m³ in 2006.³ This decrease is partly due to the transfer of hardwood processing capacities to Eastern Europe,

¹ UNECE and FAO. 2007. *Forest Products Annual Market Review 2006-2007*.

² Federation of the European Parquet Industry. *FEP Statistics 2006*.

³ UNECE/FAO. *Forest Products Statistics 2002-2006*.

Figure 14
Price of Canadian hardwood lumber exports, 1997-2006

Source: *Global Trade Atlas*

Europe —■—
Japan —◇—
China —◇—
United States —◇—
World —*—

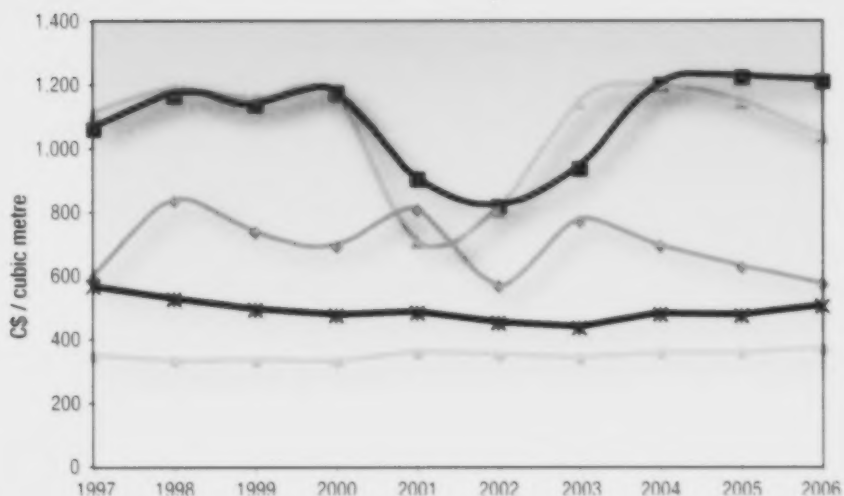
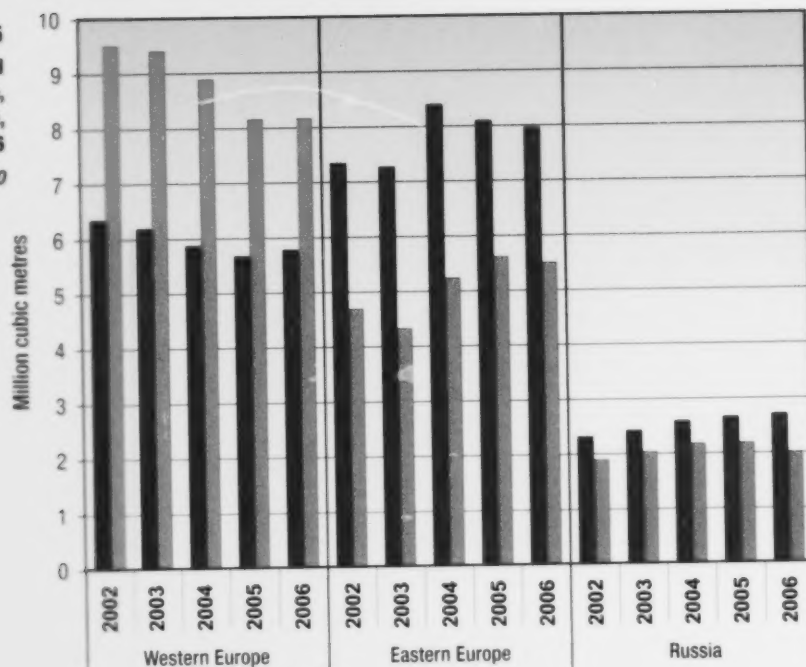


Figure 15
Hardwood lumber production and
consumption in Western Europe,
Eastern Europe and Russia,
2002-2006

Source: UNECE/FAO

Production ■
Consumption ■



where both hardwood lumber production and demand has been increasing. Other reasons include the increased use of composite panel products and weakening economic conditions in Western Europe during this period.

The European joinery and furniture industries are under severe cost pressure from China and other Far East countries, which has resulted in rising imports of finished products into Europe and increased competition in export markets.⁴ The cost pressure translates into looking for low cost raw materials and semi-finished products. Throughout Europe, manufacturing companies are cutting costs by increasing their purchases of semi-finished components or moving production eastward.

Eastern Europe's competitive advantages

Production of labour-intensive and low margin products in particular has been shifting to Eastern Europe because of low labour costs by Western European standards. Additionally, many regions of Eastern Europe have a highly qualified workforce and large forest resources that were underutilized during Eastern Bloc times. Finished furniture and joinery products manufactured in Eastern Europe are mostly exported to Western Europe; semi-finished components are shipped to Western Europe for further processing and final assembly into furniture, cabinets and joinery products.⁵

**Increased Russian
hardwood lumber
production will add to
the competition to North
American hardwoods.**

⁴ See also **Trend 5: European furniture industry is improving its competitiveness** (page 17)

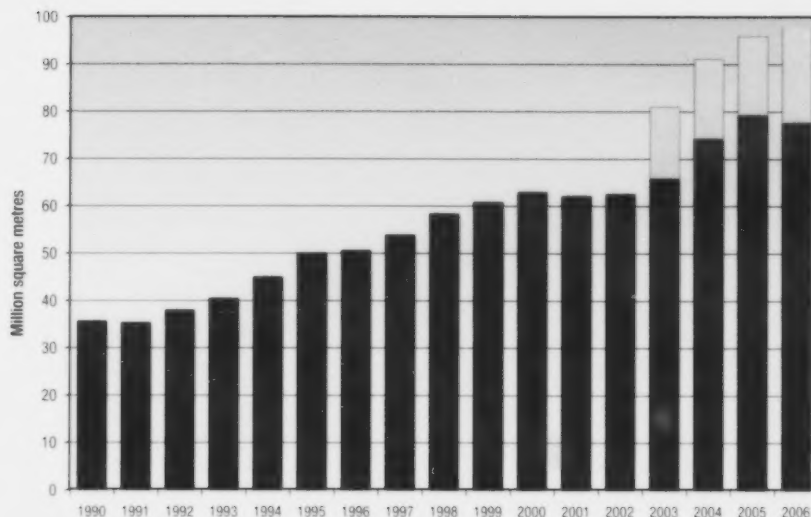
⁵ Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

Figure 16
Hardwood flooring production in
Europe, 1990-2006

Source: FEP

Note: Production in FEP member countries in Eastern Europe (Czech Republic, Hungary, Poland, Romania) and Western Europe (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland). Eastern Europe data available from 2003.

Eastern Europe ■
Western Europe ■



In 2005, the Baltic States, Czech Republic, Hungary, Poland, Slovakia and Slovenia were admitted into the EU, while Bulgaria and Romania joined in 2007. The EU expansion has improved ease of access, investment and trade to and from Western Europe, accelerating the above mentioned investments in the eastern European countries now part of the EU. While not yet in the EU, Bosnia & Herzegovina, Croatia and Serbia have significant hardwood lumber production and processing capacities.⁶ Western European manufacturers are also investing in the Ukraine and Belarus because of even lower labour costs, accessible forest resources and the proximity to growing markets in Eastern Europe and Russia.

Russia expected to expand hardwood processing

Russia's new export duty on logs (both hardwood and softwood) is scheduled to be up to 80% and no less than €50/m³ by January 2009.⁷ This would in effect halt log exports from Russia. It would also help boost Russia's hardwood lumber production and exports, driven by growing demand for temperate hardwoods in Asia and Europe. Increased Russian hardwood lumber production will also add to the competition to North American hardwoods. Much of the anticipated new hardwood processing in Russia will likely be established through foreign investment.⁸

Photo credit: Corinne Cuendet, Clarens/LIGNUM

⁶ UNECE/FAO. *Forest Products Statistics 2002-2006*.

⁷ USDA Foreign Agricultural Service. 2007. *Russian Federation Solid Wood Products: Russian Tariff Policy Update 2007*. GAIN Report RS7048.

⁸ UNECE and FAO. 2007. *Forest Products Annual Market Review 2006-2007*.

MARKET OPPORTUNITIES & THREATS

- Unprocessed hardwood lumber competes directly with low-cost imports from Eastern Europe and Russia. Further processing of hardwood lumber for export to Europe is essential for two reasons:
 1. capitalize on the trend towards using more components instead of lumber; and
 2. compete with alternative sources of lumber supply in Eastern Europe by offering high-quality, semi-finished or finished products.



Photo credit: Ralph Feiner, Malans/LIGNUM

For more information:

Federation of the European Parquet Industry. <http://www.parquet.net/>

Wahl, A. 2007. *Opportunities for Canadian Wood Products in Appearance Applications in Europe: Final Report 2006/07*. Value to Wood No. 29. Forintek Canada.

Wiles, R. 2007. Russia Makes a Bid To Boost Production, While China Turns Up the Pressure: Sawn Hardwood Markets, 2006-2007. In: UNECE and FAO. *Forest Products Annual Market Review 2006-2007*. Available at: <http://www.unece.org/trade/timber/mis/fpama.htm>



Photo credit: Corinne Cuendet, Clarens/LIGNUM

Modified wood and wood-plastic composites are substituting for traditional wood products

Dallin Brooks
Antje Wahl

Technologies for wood modification and wood-plastic production have been known for a long time, but market interest grew only when consumers became concerned about wood preservatives and illegal logging of tropical wood species. Additionally, reduced availability of many tropical species and higher tropical timber prices have made wood modification techniques financially viable.

Wood is modified either through heat treatment (thermal modification) or chemical treatment such as acetylation. All modification techniques change important wood properties, such as moisture absorption, dimensional stability, biological durability, hardness and colour, and they aim at improving typical disadvantages of wood.

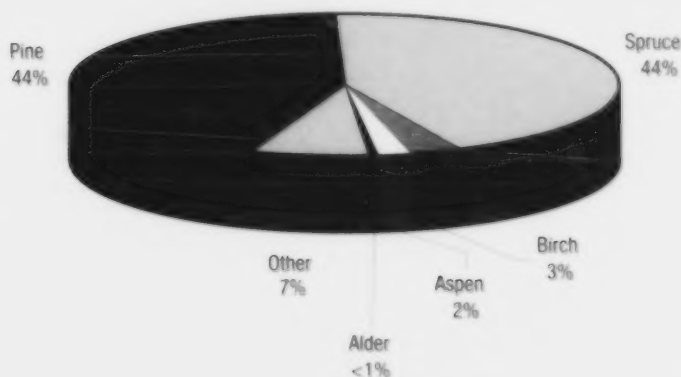
The volume of chemically modified wood products on the market is very small, while thermally modified wood products and wood-plastic composites are now widely available. The goal of this section is to describe these products, their markets and applications in Europe, and resulting opportunities for Canadian manufacturers.

Thermally modified wood

Markets for thermally modified wood, sometimes referred to as heat-treated wood, have developed considerably over the last decade. Compared to other wood modification methods in the market place, thermal modification is the most successful. In this process wood is heated in a stainless steel kiln to

Photo credit: Balz Langnau i.E./LIGNUM

Figure 17
Wood species used in ThermoWood® thermal modification process, 2006
Source: Finnish ThermoWood Association



The dark colour and enhanced stability of thermally modified hardwood flooring help temperate wood species compete with tropical imports.

temperatures between 180°C and 230°C. This results in a permanent change in the chemical composition of the wood, giving improved durability and performance.

Initially thermal modification was viewed as an alternative to chemical preservatives. Although this mentality still continues to some degree, many manufacturers have relaxed their claims on the biological durability of thermally modified wood. Instead they focus on the colour change, improved dimensional stability, and improvement in durability compared to other naturally durable wood species.

The Finnish ThermoWood Association has been a key player in the development of the market. Thermally modified wood products have developed into five main end-use applications:

- hardwood flooring
- siding and cladding
- decking
- sauna panelling and interior wall panelling
- outdoor furniture and specialties.

Thermally modified wood competes for the most part with tropical wood species in Europe, but also with western red cedar in siding, decking and other outdoor applications. More thermal modification systems have been installed for hardwood flooring than for any other application, yet the average volumes are often small with annual chamber capacities around 1 to 3 MMbf. Parquetry flooring is the main end use where the dark colour and enhanced stability help temperate wood species compete with tropical imports.

Most of the thermal modification capacity in Europe belongs to softwoods, with volumes reaching as high as 10MMbf per year per chamber. Modified softwoods supply the siding and decking industry where the durability and stability improvements, along with the elimination of resin bleed help pine and spruce compete with naturally durable species. Some manufacturers have

Table 2
Thermal modification equipment suppliers in Europe and number of operating systems

Source: Compiled by Dallin Brooks based on best available knowledge

Thermal Modification Equipment Manufacturers	Country of Origin	Method of Thermal Modification	Annual Capacity	Number of Operating Systems	
Jartek	Finland	Steam	30 MMbf	14 Commercial	5 R&D
Mahild	Germany	Steam	>10 MMbf	>2 Commercial	2 R&D
Menz Holz	Germany	Hot Oil	? MMbf	>1 Commercial	?
Muhlbock	Austria	Steam	? MMbf	>1 Commercial	?
RETltech <i>previously New Option Wood</i>	France	Nitrogen	2 MMbf	4 Commercial	?
Plato	Netherlands	High Pressure Steam	? MMbf	>1 Commercial	?
Stellac	Finland	Steam	>10 MMbf	>4 Commercial	1 R&D
Valutec	Finland	Steam	>8 MMbf	>4 Commercial	?
WTT	Denmark	High Pressure Vacuum	? MMbf	>1 Commercial	1 R&D

diversified their product lines into other areas such as wall panel mouldings and furniture. Thermally modified wood is also going to the hot sauna market in Europe, and other specialty products.

European companies producing thermally modified wood vary considerable in size and type, ranging from large sawmills,¹ flooring manufacturers, service providers² and mid-sized value-added manufacturers to small start up companies³. European producers have reached the limit of their capacities, and they are looking to expand production to meet growing demand. While thermal modification is gaining momentum and firmly establishing itself as a viable product, a strong economy of scale is yet to be achieved.

While all wood species can be heat-treated, the process needs to be optimized for each species. In Canada and the US, thermal modification has been carried out for a wide range of hardwoods and softwoods, including the following species:

- Aspen
- Birch
- Maple
- Yellow poplar
- Red oak
- Lodgepole pine (blue stained)
- White pine
- Ponderosa pine
- Southern yellow pine
- Hemlock
- Douglas-fir (small diameter)

Wood-plastic composites

Wood-plastic composites (WPC) are a form-shaped composite material made of cellulosic particles, such as wood flour, and thermoplastic polymers. The wood mass share of the finished product usually lies between 25% and 85%. At present wood is used as a filler material, but research is under way to use wood fibre to improve WPC's mechanical strength properties.

Advantages of WPC include the possibility of producing many different shapes without any waste, and the option of veneering. WPC has better dimensional stability, weather resistance, low maintenance cost and extended lifetime compared with many wood products. Mechanical performance is relatively poor however, limiting WPC's present use to non-structural end-uses.

The most common end-uses are currently in non-load bearing construction such as outdoor decking and siding. Outdoor products (siding, decking, fencing,

¹ For example, StoraEnso <http://www.storaenso.com/>

² For example, SWM <http://www.swm-wood.com/>

³ For example, LunaWood <http://www.lunawood.fi/>

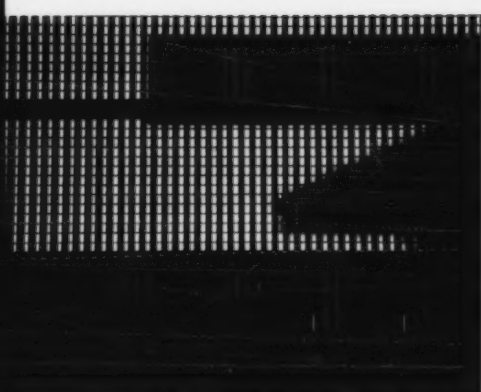


Photo credit: Architektur und Baumanagement AG,
Dallenwil/LIGNUM

Figure 18
WPC applications in Europe excluding
automotive parts, 2004
Source: Hackwell Group

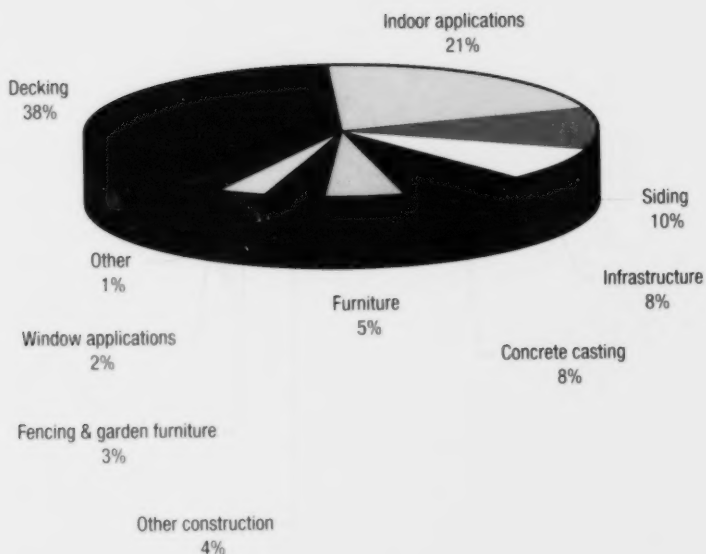


*Photo credit: Johannes Weizenegger, Pavatex SA
 Cham/LIGNUM*

etc.), furniture, construction, automobile parts and infrastructure applications are regarded as the most promising growth markets for WPC in Europe.

The estimated market share of WPC in total wood product consumption in Europe was estimated at far less than 1% in 2006, but annual growth rates in WPC consumption are estimated at over 10%. European WPC production was estimated at approximately 100,000 tons in 2007.⁴ The leading countries are Germany, Austria, Belgium, Netherlands and Scandinavia.

Differences exist between North America's more mature WPC market and Europe's smaller, but fast growing market. While decking accounts for over half of WPC volumes consumed in North America, WPC end-uses in Europe are more varied and there is no single dominating end-use application for WPC.

In 2007, a quality assurance label for WPC decking was introduced in Europe, to establish standardized performance values. Eight companies from Belgium, Germany and the Netherlands have applied to have their WPC products certified under the new quality label.⁵

While outdoor products, and furniture in particular, are expected growth markets for WPC in Europe, consumer surveys found considerable caution towards WPC as a new material. In Austria and Germany, consumers surveyed preferred wood materials to WPC in decking, even when considering maintenance and product lifetime.⁶

⁴ *WPC Seal of Quality to Establish Uniform Criteria*. 2007. EUWID Wood Products & Panels, 82(5):10.

⁵ Qualitätsgemeinschaft Holzwerkstoffe e.V. <http://www.qg-holzwerkstoffe.de/QualitaetWPC.cfm>

⁶ Eder, A., Weinfurter, S., Schwarzbauer, P., and Strobl, S. 2007. *WPCs – An Updated Worldwide Market Overview Including a Short Glance at Final Consumers*. Wood Fibre Polymer Composites International Symposium 26-27 March 2007, Bordeaux, France.

MARKET OPPORTUNITIES

- The growth in modified wood and WPC in Europe is both an opportunity and a threat to Canadian exporters. The threat is relatively small, however, since modified wood and WPC compete primarily with tropical wood species or non-wood materials in Europe. Decking and siding are an exception, which are an important market, especially for western red cedar.
- Many opportunities exist in developing new products for export to the growing market for modified wood in Europe; the most promising opportunity for Canadian producers is thermally modified hardwoods for flooring.
- Serving existing markets for thermally modified wood in Europe can also help Canadian manufacturers develop new markets for heat-treated wood products in Canada and the US.

Most of the thermal modification capacity in Europe belongs to softwoods that supply the siding and decking industry.

For more information:

Finnish ThermoWood Association. <http://www.thermowood.fi> A *ThermoWood Handbook* and other technical publications are available under "Brochures/Texts" on the Finnish ThermoWood Association website.

Forintek Canada. *Thermally Modified Wood*. 2003. Value to Wood Technology Profile TP-0301E. Available at: <http://www.solutionsforwood.ca/files/techpaper/TP-03-01E.pdf>

Companies with thermal modification information on their websites:

Finnforest. <http://www.finnforest.co.uk/default.asp?path=200;256;1317;1318;1324>

StoraEnso. http://www.storaenso.com/CDAvgn/main/0,,1_EN-3442-4052-,00.html

Wood-plastic Composite Growth Taking Off in Europe. 2006. *Additives for Polymers*, 2006(5):9-10.

Eder, A., Weinfurter, S., Schwarzbauer, P., and Strobl, S. 2007. *WPCs – An Updated Worldwide Market Overview Including a Short Glance at Final Consumers*. Presented at the Wood Fibre Polymer Composites International Symposium 26-27 March 2007, Bordeaux, France.

Hackwell Group. 2006. *Wood Plastics Composites in Europe (2006): Analysis - Technology - Market Opportunities*. Available for purchase at: <http://www.woodplasticcomposites.org/>

In many European countries energy from wood is less costly for consumers than fossil energy sources.

Bioenergy boom is starting to affect the forest industry

Antje Wahl

Energy from biomass plays a central role in the EU's energy policy. Between 1997 and 2006 the amount of renewable energy produced in the EU increased by 55%. In 2007 the EU set a new target of a 20% share for renewable energy in primary energy consumption by 2020. To reach this goal, a doubling of biomass use in heating and cooling, and a further increase in electricity generation from biomass is anticipated.¹

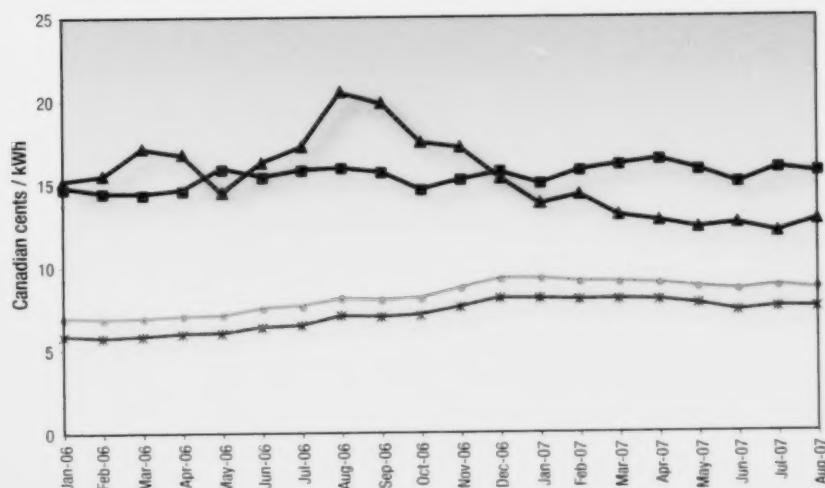
The strong interest in renewable energy is driven by the obligation to cut greenhouse gas emissions, the need for energy security and rising prices for fossil fuels. Europe currently imports more than half of its energy needs.² With energy generation from coal in decline and nuclear energy facing public resistance, Europe's dependence on imported energy is forecast to grow further unless locally available, renewable energy sources are developed.

Figure 19
Heating Prices for Electricity, Oil and
Wood Pellets in Sweden, 2006-2007

Source: ÅFAB

Note: Pellet prices are average of nine Swedish producers. Electricity price includes Swedish energy tax, green electricity certificate and grid service charge.

Electricity —▲—
Oil —■—
Wood pellets (bulk) —*—
Wood pellets (3-ton bags) —○—



¹ European Commission. 2007. Renewable Energy Road Map.
http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf

² European Commission. 2007. Pocket Book Energy and Transport in Figures.

Each EU member state has set individual targets for renewable energy and put in place support programs to help grow the renewable energy sector. Three principal types of support programs exist for renewable electricity:³

- In the **feed-in tariffs** system, fixed prices (or fixed premiums above normal electricity prices) must be paid by electricity companies to domestic producers of renewable electricity. The additional cost is passed on to consumers. This system the most widely used by EU member states.
- In the **green certificates** (or quota-and-trade) system, renewable electricity is sold at the same price as electricity from conventional sources, but all consumers are obliged to buy green certificates so that renewable energy represents a specific quota of their total electricity consumption.
- **Tax incentives** are used as an additional policy tool in most countries, except Finland and Malta where tax and investment incentives are the only support for renewable energy.

These incentives have made biomass competitive with fossil fuel, and in many markets energy from wood is less costly for consumers than fossil energy sources. Wood is used in electricity generation in large-scale plants, often co-fired with coal; in heat and electricity generation within the wood products industry; in home heating (central heat and stoves); and in district heating and electricity generation. Wood use for liquid fuels is minor at present, but this will likely change in the near future when cellulosic ethanol and biodiesel are produced on a commercial scale.

³ European Commission. 2005. How to Support Renewable Electricity in Europe? http://ec.europa.eu/energy/res/biomass_action_plan/doc/2005_12_07_biomass_memo_res_en.pdf

While wood supplies from Europe's forests can increase further, in many cases imports will be more cost-effective.



Photo credit: Andre Carlen/LIGNUM

Many sawmills and panel mills have been able to increase profits by building co-generation plants and selling into the grid.



Photo credit: Michael Meuter/LIGNUM

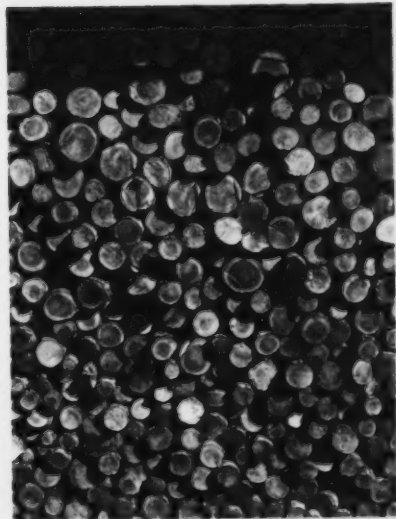


Photo credit: Michael Meuter/LIGNUM

Bioenergy is driving up wood residue prices, forest utilization

Since wood accounts for much of the past and anticipated future growth in renewable energy, the 20% target for renewable energy is expected to have major implications for the forest sector. The amount of wood used for energy generation is about half the total roundwood consumption in Europe compared with less than 40% in North America. The sources of wood vary widely within Europe. Overall, wood residues account for 49%, and fuel wood from the forest for 45% of total wood energy consumption, based on data from twelve EU countries. Strict regulations on post-consumer wood disposal have led to an increase in recovered wood use for energy in some countries (Germany, Netherlands, Switzerland and the UK).⁴

The European forest industry has emerged as a major player in bioenergy, not only generating heat and power for its own energy needs, but also selling electricity to energy companies. Many sawmills and panel mills have been able to increase profits by building co-generation plants and selling into the grid.

However, some sectors of the industry compete with energy production for wood supply and they are concerned about the future availability and pricing of wood. Growing demand for wood from bioenergy producers has increased raw material cost and shortages for particleboard manufacturers and some pulp producers, especially for users of sawdust and other low grade residues.⁵ While wood supplies from Europe's forests can increase further, in many cases imports will be more cost-effective.

Bioenergy is driving a new sustainability certification movement

While bioenergy can contribute to climate change mitigation and energy security, concerns are mounting about the sustainability of a large scale bio-mass supply in terms of environmental and socio-economic impacts. Currently there is an international discussion on how to address these concerns and how to ensure that bioenergy does indeed lower greenhouse gas emissions. The Dutch, UK and German governments have drafted sustainability criteria and greenhouse gas reporting mechanisms for biofuels, but European standards on sustainability of biomass for bioenergy are likely to replace these national initiatives.⁶

⁴ Steierer, F. and A. Fischer-Ankern. 2007. Wood Energy in Europe and North America: A New Estimate of Volumes and Flows.

⁵ UNECE and FAO. 2007. *Forest Products Annual Market Review 2006-2007*.

⁶ Dehne, B., Meyer, S., and Hamelinck, C. Towards a Harmonised Sustainable Biomass Certification Scheme. http://assets.panda.org/downloads/harmonised_sustainable_biomass_scheme.pdf

MARKET OPPORTUNITIES

- Growing demand for energy from wood is expected to increasingly affect wood pricing and strengthen international trade in wood biomass to Europe. While wood supplies from Europe's forests can increase further, in many cases imports will be more cost-effective.
- Prospects for exporting wood-based fuels and feedstocks to Europe are at present limited to densified wood, such as wood pellets, because the energy content of most other wood-based fuels is too low for cost-competitive transport to Europe.⁷

⁷ See also **Trend 9: Sustained growth in wood pellet demand** (page 33).

For more information:

EurObserv'ER. 2006. *Solid Biomass Barometer*. Available at:

http://www.energies-renouvelables.org/observ-er/stat_baro/observ/baro176.pdf

European Commission. 2007. *Renewable Energy Road Map*. Available at:

http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf

Hillring, B., Olsson, O., Gaston, C., Mabee, W., Skog, K., and Stern, T. 2007. Energy Policies Reshaping Forest Sector: Wood Energy Development UNECE Region, 2006-2007. In: UNECE and FAO. *Forest Products Annual Market Review 2006-2007*. Available at:

<http://www.unece.org/trade/timber/mis/fpama.htm>

Steierer, F. and A. Fischer-Ankern. 2007. *Wood Energy in Europe and North America: A New Estimate of Volumes and Flows*. Available at: <http://unece.org/trade/timber/docs/stats-sessions/stats-29/english/report-conclusions-2007-03.pdf>



Photo credit: Maja Wirz-Knorr, Oberstammheim/LIGNUM

Sustained growth in wood pellet demand

Antje Wahl

Approximately half of all pellets are used in residential heating while the other half is used in mid- to large-size power plants.

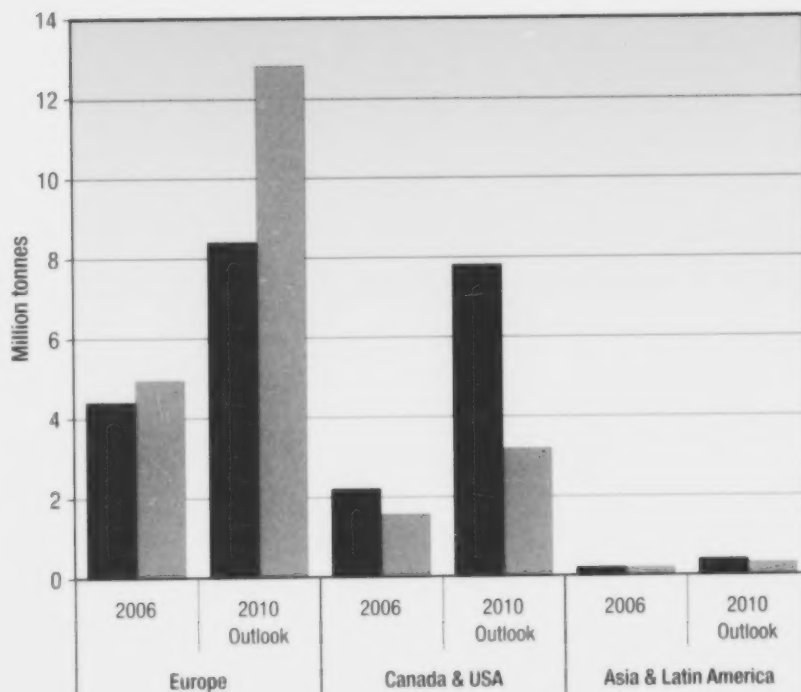
Europe's demand for wood pellets is growing faster than domestic pellet supply. In 2006, total European pellet production was about 4.5 million tonnes while consumption was estimated at about 6 million tonnes. The gap between European pellet supply and demand is expected to increase to between four and five million tonnes by 2010.^{1 2} The strong growth in wood pellet demand is driven by the obligation to cut greenhouse gas emissions, Europe's need for energy security and rising prices for fossil fuels (see also **Trend 8: Bioenergy boom is starting to affect the forest industry**, page 29).

Canada is Europe's largest source of pellet imports. Canada produced around 1.2 million tonnes of pellets in 2006, more than half of which were exported to Europe. Like Canada, Russia, Finland, the Baltic States and Poland are

Figure 20
World production and consumption of wood pellets by region, 2006 and 2010 outlook

Source: Pellet Italia

Production ■
Consumption ■



Wood Pellet Uses

Pellet stoves for additional heating or for central heating in low-energy homes

Boilers for central heating in single- and multi-family homes

Boilers for district heating, sometimes with electricity generation (co-generation)

Co-firing with coal in large power plants

¹ Swaan, J. 2006. Keynote Address at Workshop on Bioenergy Opportunities, 19 Sep 2006, Winnipeg, MB.

² Pellet Italia. http://www.pelletitalia.org/produzione_prezzo_vendita_pellet.htm

The strong growth in wood pellet demand is driven by the obligation to cut greenhouse gas emissions, Europe's need for energy security and rising prices for fossil fuels.

mainly exporters of wood pellets with low domestic consumption.³ Much of Europe's pellet imports come through the Port of Rotterdam in the Netherlands, which has recently proposed to put out the first official price index for pellets. However, Canadian wood pellet exports to Europe are highly sensitive to changes in the freight rates, bulk shipping capacities and European pellet prices.

Pellet markets and uses

Sweden, Denmark, Italy, Netherlands, Germany, Austria and Belgium are Europe's largest pellet markets, presently accounting for about 95% of total pellet consumption.⁴ Approximately half of all pellets are used in residential heating while the other half is used in mid- to large-size power plants.

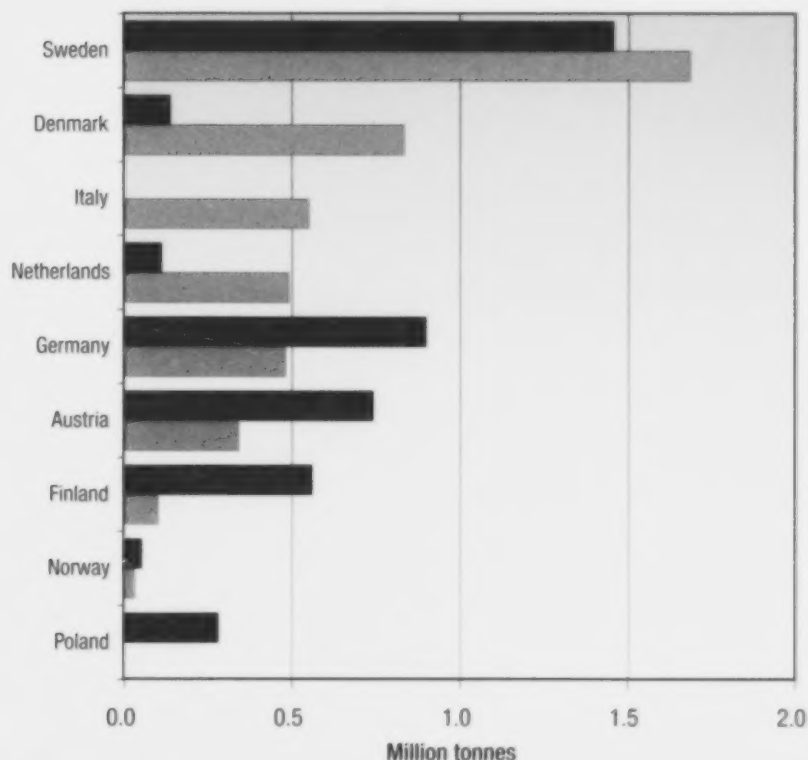
In Scandinavia and the Netherlands, most of the pellets are fired in district heating plants and in large power plants. In central and southern Europe (Austria, Germany and Italy) private households are the main market, who buy pellets for stoves and small combustion units for central heating. Italy is currently the fastest growing market for pellet heating systems in Europe, mostly in pellet stoves and pellet central heating systems. France is a relatively new market for pellets, and pellet heating systems are just becoming established in the market place.

Figure 21
Pellet production and consumption in selected European countries, 2006

Source: Pelletsatlas, Solar Promotion

Note: Austria and Germany production figures are for 2007. Italy production not available.

Production ■
Consumption ■



³ Solar Promotion. 2007. *Great Potential for Pellets Markets in Europe and Worldwide*. Press release for trade show Interpellets 2007, 10-12 Oct 2007, Stuttgart, Germany. <http://www.interpellets.de/uploads/media/PR20070711.pdf>

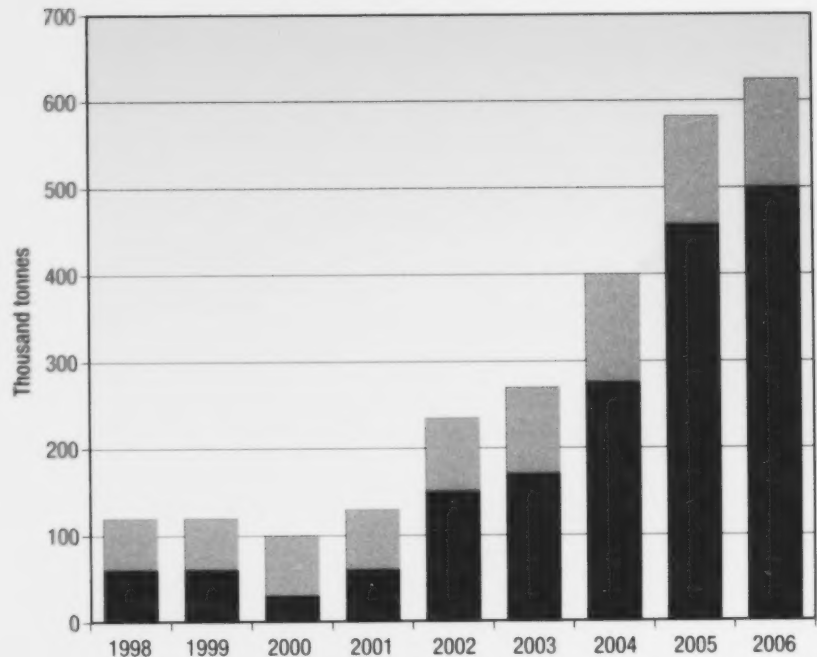
⁴ European Pellet Centre and Pelletsatlas. <http://www.pelletcentre.info/>

Reliable information on pellet supply and demand is not available for all countries in Europe. The European Pellet Centre is currently collecting data on pellet markets in all EU27 countries, plus Norway and Switzerland. Countries are profiled in the Centre's newsletters (available online), the first of which was published in mid 2007.⁵

⁵ European Pellet Centre. Newsletter Archive of the Pellets@las Project.
<http://www.pelletcentre.info/CMS/site.asp?p=5348>

Figure 22
Canada overseas exports of wood pellets, 1998-2006
Source: Wood Pellet Association of Canada

East Coast ■
West Coast ■



MARKET OPPORTUNITIES

- Wood pellets continue to offer good export opportunities as European demand continues to increase.
- The cost of wood supply and pellet transport logistics from Canada must be competitive with European pellet suppliers.
- The energy content of most other wood-based fuels that are currently commercially available is too low for efficient transport to Europe.



Photo credit: Wood Pellet Association of Canada

For more information:

ÅFAB. <http://www.afabinfo.com/bioguiden/pellets/pelletspris/pelletstermometern.htm>
(pellet prices, in Swedish)

European Pellet Centre and Pelletsatlas. <http://www.pelletcentre.info/>

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http://www.energyagency.at/projekte/pellets_net.htm

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<http://www.saskforestcentre.ca/index.php?f=content&c=177>

Pellet Fuels Institute. <http://www.pelletheat.org/>

Wood Pellet Association of Canada. <http://www.pellet.org/>



Photo credit: Christoph Starck, Meilen/LIGNUM

National and Europe-wide wood promotion initiatives are gaining strength

Antje Wahl

Sector-wide wood promotion has a long tradition in the forest products industry, mainly because of the sector's highly fragmented structure. Compared to competing industries producing metal, plastic and concrete products, wood product manufacturers remain relatively small companies. However, the industry's fragmented structure has also been a problem for wood promotion as many companies identify other wood products as their main competition, and not competing non-wood materials and products.

The main objective of wood promotion is to increase the market share of wood at the expense of other materials. Normally funded by the forest industry, governments and sometimes forest owners, promotion agencies target decision makers to influence attitudes - technical and cultural - in favour of wood. Growing market competition, substitution and decreased profitability in the forest industry have reinforced the need for wood promotion in recent years.

Roadmap 2010 program for growing wood demand in Europe

Growth in wood consumption in Europe has slowed down in the last decade, mainly because of unfavourable economic conditions. Until 2010, European per capita consumption of wood products is forecast to grow on average 1% per year, which is below the expected GDP growth in Europe.¹ In response to this unpromising outlook, the forest industry launched its first ever Europe-wide strategic process. The Roadmap 2010 program aims at increasing demand growth for wood products ("grow the pie") through an overall wood sector strategy. Wood promotions across Europe and changing attitudes to wood in the home and work environment form a critical part of the program.²

To be more effective in promoting wood products, the European forest industry sector has started collaborating on international wood promotion campaigns. This new collaborative approach is driven by: budgets too limited for effective national campaigns; and a new focus on promotion in export markets outside Europe.



The forest industry launched its first ever Europe-wide strategic process, the Roadmap 2010 program.

Photo credit: Hannes Henz/LIGNUM

¹ Jaakko Pöyry Consulting. 2004. Key Findings and Conclusions: Market, Industry and Forest Resource Analysis as Part of the Roadmap 2010 Process.

http://www.roadmap2010.eu/about/PDFs/Reports/JPC_Summary.pdf

² Roadmap 2010. <http://www.roadmap2010.eu/>

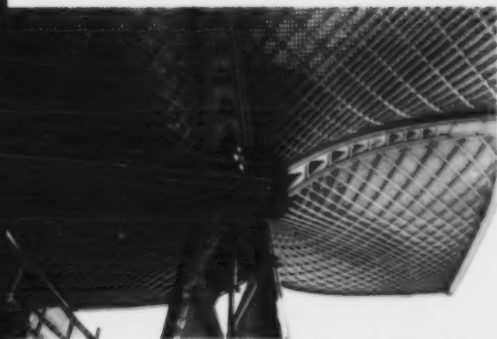


Photo credit: Andrea Bernasconi/LIGNUM

Growing market competition, substitution and decreased profitability in the forest industry have reinforced the need for wood promotion in recent years.

Trend towards generic wood promotion campaigns

Finland, Norway and Sweden were the first to recognize the advantages of joint promotion. The "Nordic Timber Council" promoted Scandinavian wood in Europe until 2006. Since then they have moved to generic wood promotion and greater cooperation with other European countries. National wood promotion agencies are recognizing that generic wood promotion is more effective than campaigns for "national" wood products.

Existing wood promotion expertise in Scandinavia and elsewhere in Western Europe is being transferred to the new EU members in Eastern Europe. Cultural differences and the countries' proprietary funding sources to build their own domestic and export markets remain barriers to implementing more joint campaigns.



Photo credit: Corinne Cuendet, Clarens/LIGNUM

MARKET OPPORTUNITIES

- The Canadian industry should capitalize on, and possibly participate in, wood promotion campaigns across Europe.
- Benefits from the Roadmap 2010 program to increase wood consumption include both a potentially larger market in Europe and less competition from European manufacturers in offshore markets.

Joint European wood promotion initiatives:

Roadmap 2010: Consolidating and expanding wood promotion activities by national organizations and industry is a key component of the Roadmap 2010 program to raise per capita wood consumption in Europe and increase exports to non-European markets.
<http://www.roadmap2010.eu/>

"European Wood" in China and Japan: Austria, France, Germany, Norway and Sweden are cooperating in wood promotion and technology transfer for wood construction in China and Japan under the European Wood Initiative umbrella.
<http://www.europeanwood.org/>

"wood for good" in the UK: "wood for good" is the largest international campaign in Europe, now financed by Sweden and organizations in the UK.
<http://www.woodforgood.com/>

"Baltic 21": Sweden transfers knowledge about building with wood to Estonia and Latvia within the Baltic 21 process for sustainable development.
<http://www.baltic21.org/>

"Le bois c'est essentiel" in France: This campaign for building with wood is a partnership between Sweden and France.
<http://www.bois.com/>

"promo_legno" in Italy: Austria campaigns for increased wood use in Italy in cooperation with Italy's forest industry associations.
<http://www.promolegno.com/>

ProLignum in the Czech Republic: Austria and the Czech Republic cooperate in generic wood promotion using the promo_legno model.
<http://www.prolignum.cz/>

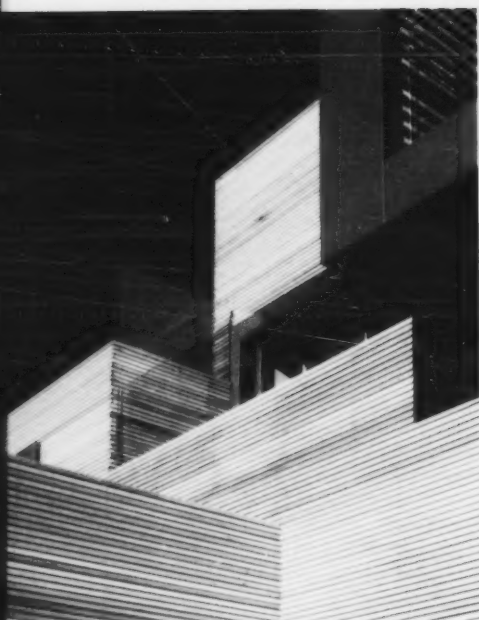


Photo credit: Karin Aeschlimann, Meilen/LIGNUM



Photo credit: Michael Meuter/LIGNUM

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Photo credit: Pierre Ross, Reners/LIGNUM

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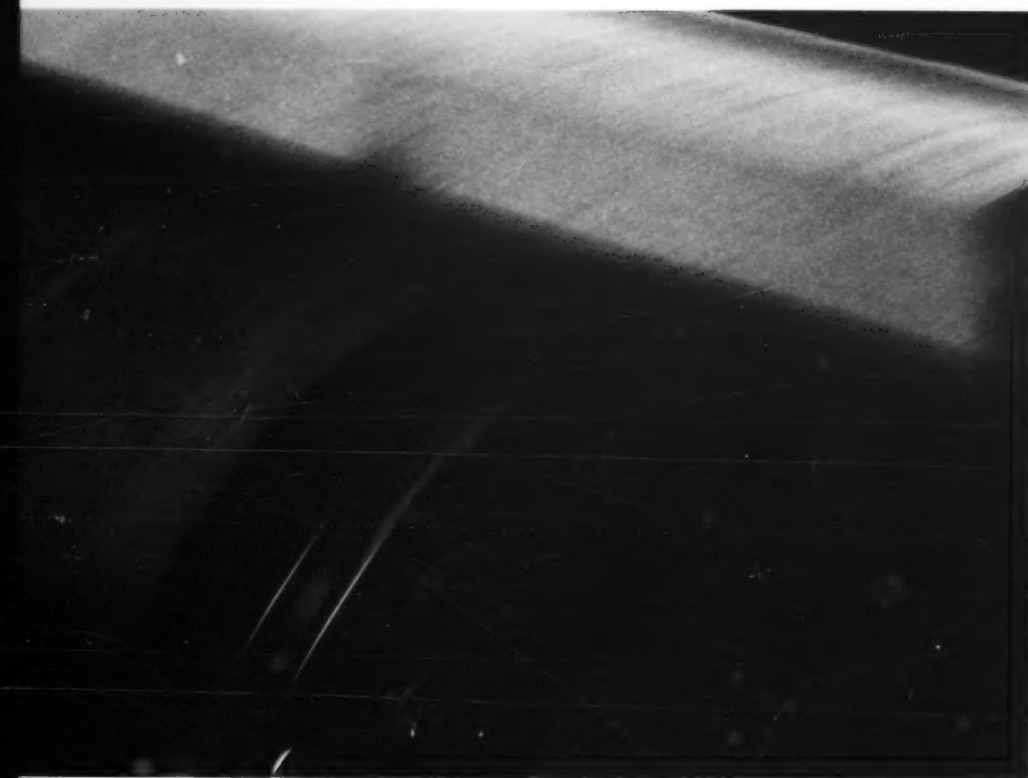


Photo credit: Michael Meuter/LIGNUM

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